



Case Study:
**Public-Private
Partnership Structure
in Viet Nam's
Coffee Sector**





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Author
Tran Thi Quynh Chi

Editor
Grow Asia

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About Grow Asia

Established by the World Economic Forum (WEF) and the Association of Southeast Asian Nations (ASEAN) Secretariat, Grow Asia is a unique multi-stakeholder partnership platform that brings together farmers, governments, companies, NGOs, and other stakeholders in Southeast Asia to develop inclusive and sustainable value chains. At Grow Asia's core are three goals – to increase the productivity, profitability, and environmental sustainability of smallholder agriculture across the region, by helping farmers and the organizations that work with them access knowledge, technology, finance, and markets.

Grow Asia is comprised of a Regional Secretariat in Singapore; six Country Partnerships – each supported by an in-country Secretariat; and the Working Groups, which focus on specific issues or crop-based value chains.

About PSAV

The Partnership for Sustainable Agriculture in Viet Nam (PSAV) focuses on linking actors in the agricultural sector to share experiences and collaborate on the value chain development of key commodities in Viet Nam through public-private partnerships (PPP). As the Grow Asia Country Partnership in Viet Nam, PSAV works closely with the Ministry of Agriculture & Rural Development (MARD) and other government agencies.

PSAV has eight PPP Task Forces (TFs), including Coffee, Tea, Vegetables and Fruits, Fisheries, Rice, Spices and Pepper, Livestock, and Agrochemicals, which are formed and operated with the participation of 120 organizations from the public sector, companies, industry associations, research institutes, international and non-governmental organizations.

Purpose of the Case Study

This case study, “Public-Private Partnership Structure In Viet Nam's Coffee Sector” is a follow-up to PSAV's two initial coffee case studies – the **Journey** and the **Business Model** – published in 2016. Both case studies explored the process of operationalizing the Coffee TF from its initial genesis to early project implementation



(2010-2015) that worked in the coffee value chain. Improvement in productivity and reduction of the environmental footprint of small-scale farm production in Viet Nam were examples of positive results from the project. The Good Environmental Practices (GEP) that this case study is built on came out of the preliminary work of the Coffee TF in the early 2010s which involved multiple partners and was spearheaded by Nestlé, Yara and Syngenta. The initial positive lessons from the Coffee TF were used to leverage the creation of a much larger PPP, the Viet Nam Coffee Coordination Board (VCCB).

This follow-up case study aims to capture the long-term effects and impact of multi-stakeholder partnerships. The VCCB, established in 2013, has evolved over the years and played a positive role in achieving greater scale in the dissemination of the GEP, impacting taxation policy, facilitating alignment of activities across the coffee sector, and accelerating and amplifying the exchange of learnings and good practices. The evolution and key changes in the PPP structure of Viet Nam's coffee sector are showcased in this report, which has generated lessons for other sectors in Viet Nam as well as in the wider ASEAN region.



► [Coffee in Viet Nam:
The Journey](#)



► [Coffee in Viet Nam:
The Business
Model](#)

Executive Summary

The Developing Role of the VCCB

In 2010, Viet Nam's MARD set up several informal private & public sector TFs to facilitate the sustainable development of key agricultural commodity sectors, including coffee.

The Coffee TF brought together several companies and organizations, including coffee exporters, input suppliers, and NGOs, with the aim to improve productivity, profitability, and sustainability of coffee production. The GEP promulgated by the stakeholders to the smallholders and their partner organizations had a positive impact – coffee yields improved by around 15%, but its main benefit was the improvement of inputs efficiency – particularly fertilizer, which has lowered production costs and reduced greenhouse gas (GHG) emissions by half per unit of production. However, the impact of this program was limited as it involved a few partners and reached only 0.5% of Viet Nam's coffee farmers. In effect, this early-stage work can be considered a pilot.

In a deliberate move to reach scale, as well as to formalize the role of PPPs in the coffee sector, the **Viet Nam Coffee Coordination Board (VCCB)** was formed and included a broader range of partners, particularly those from the national agribusinesses and farmer organizations. The existing Coffee TF was then merged under the VCCB as its production sub-committee.

VCCB's activities initially focused on **policy dialogue and sharing learnings**, and several policy changes to support sustainable coffee development were facilitated. In 2015, VCCB with the support of public and private partners (building on the Sustainable Coffee Program 2012-2016¹ of IDH - The Sustainable Trade Initiative) developed a strategic roadmap 2016-2020 with clear targets for the sector. In addition, VCCB/MARD endorsed a **National Sustainability Curriculum (NSC)**, which was a standardized training program that provided sustainable production training materials for the Robusta coffee sector of Viet Nam.

In support of the coffee sector's cash flow, VCCB helped facilitate a **waiver of the application of Value Added Tax (VAT)** for green coffee bean purchases. Previously, VAT was paid and then refunded on the 95% of coffee purchased that was exported. This locked up about USD165 million for at least 12 months. The VCCB also successfully advised **against the creation of a coffee development fund** on the basis that it would adversely affect the competitiveness of the sector and its governance structure was insufficiently transparent. These successes helped establish the credibility of the VCCB.

¹ A program co-funded by IDH and partners from PSAV and VCCB, was composed of national level and field level initiatives. National level initiatives comprise (1) National Rejuvenation Plan and (2) NSC.

Delivery of GEP Sustainability Practices in the Field

Field-level impact remained limited with the GEP project reaching less than 1% of Viet Nam's coffee farmers. In response, partners moved towards creating **PPPs at the provincial and district levels, which mirrored the structure of VCCB. Local PPP mechanisms** served several roles (e.g. targets for local delivery, feedback loops into the national program) and provided the critical local mechanisms to enable the scaling of these initiatives.

In the three years since the formation of these local-level Project Steering Committees, more than 310,000 training sessions on various GEP and Good Agricultural Practices (GAP)¹ have been conducted. At least 100,000 farmers—18% of Viet Nam's coffee farmers—have attended one of these training sessions. Around 80% of the training is conducted by the private sector, and the remaining by the public sector.² 35% of the participants are women. The investments in training amount to USD3.5-4 million annually and an estimated 51% of farmers trained have adopted one or more of the GEP sustainability practices on their coffee farms.



Evolving Mode of Operation of the VCCB

The sectoral transformation is **shifting from a supply chain approach** to a landscape approach to achieve sustainability at scale. This process is also moving in parallel with the government's direction of setting up large-scale sourcing areas for agribusinesses to meet growing market demand from the region.

The VCCB has gone through several developments to become more responsive and effective as a sectoral platform. The organization is now more formal and has implemented mechanisms for coordinating and communicating with multiple ministries, creating bottom-up feedback loops, responding to market concerns about

agrochemicals, and built a sector with a competitive advantage through its responsiveness to change and solid knowledge base. The VCCB expanded the GEP field pilot project into an NSC/GEP that is adopted across public and private sector training. Provincial and district-level PPP committees were not only very effective at the field delivery of programs but also enabled feedback from producers to reach the higher-level VCCB and influence policy processes. The VCCB has also become a platform for learning, research, and provided a better understanding of the overall sector via a coffee community across the public, private, and producer sectors.

¹ Training topics include rejuvenation, nutrient use efficiency & fertilizer usage, pesticide use, pruning, water management, harvesting, processing, cooperative, climate change, and coffee certification standards.

² Public-sector training is deeper and more comprehensive e.g. three days with multiple topics, while private-sector training is shorter, and more focused on particular topics.

Quantification of Results (Per Annum)

Immediate Impact on Viet Nam's Farmers' Net Income

The project was not initially set-up to measure impact (i.e. with baselines and counterfactuals), however, it is still useful to offer a sense of the scale of impact. Indicative figures have been generated using costing data from 12,000 coffee growers, crop diaries from 300 producers, independent analysis, surveys of farmers' adoption rate, coupled with conservative assumptions.

An estimated 100,000 farmers have been reached by the program, which is equivalent to about 18% of the country's coffee growers, while 50,600 farmers are estimated to have adopted environmentally sustainable practices by the VCCB's Production Committee.

The GEP not only lowered GHG emissions which amounted to an estimated 40,000 MTCO_{2e}, but it also reduced the amount of irrigation water applied by an estimated 21 million m³ and most importantly, lowered the cost of production for farmers. In total, the savings on the fertilizer, agrochemicals, and reduced irrigation costs have amounted to an estimated USD220 per hectare. This translates into an estimated total savings of over USD12 million annually⁴ for the Vietnamese coffee farmers who have adopted these GEP.

Long Term Impact of Policy Changes

The removal of VAT on coffee purchases releases USD165 million, an amount that would have previously been held by the Ministry of Finance (MoF) for a year before being rebated. This improves the sector's cash position by 5%.

Mobilizing of Resources

Between 2016-2020, a total of USD17 million was invested in more than 20 PPP sustainable coffee production projects in Viet Nam, with the private sector contributing nearly two-thirds (USD10 million) of the amount. The training of farmers with the NSC represented annual investments of USD3.5-4 million from public finances and private sector companies.

Impact on Pesticide Use

A baseline of 300 coffee growers maintaining crop diaries showed that about 15.5% were using one or more banned pesticides or agrochemicals. Following their participation in specific pesticide training, the proportion fell to 0.5% — a 30-fold drop. Although these 300 farmers were better trained, more sophisticated in their farm management processes, and had larger farms than the average Vietnamese coffee farmer, this remains a challenge because developed markets are becoming increasingly stringent on the agrochemicals allowed in their imports. A product in point is glyphosate which the EU is raising minimum residue limits for its coffee imports. Brazil is currently losing market share because of the high presence of this product in its Robusta bean exports, while Viet Nam has a significantly better track record on glyphosate. The positive impact of the pesticide training programs bodes well for Viet Nam in the future, given the increasing sensitivity of import markets.

³ The Department of Crop Production reported approximately 550,000 total coffee households across five Central Highland provinces in 2019.

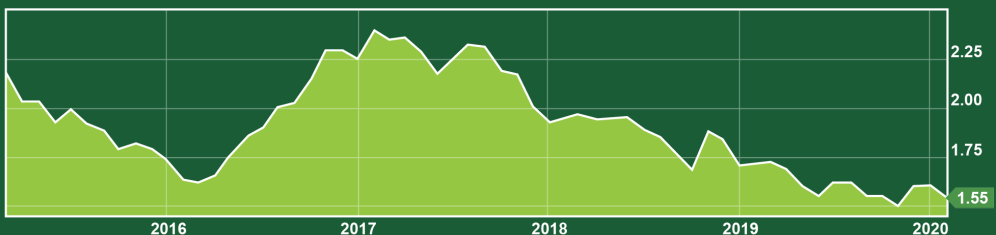
⁴ These figures are estimates, based on conservative assumptions, and are intended to guide the reader in a sense of the scale of impact at the aggregate level.

Background and Context

After Brazil, Viet Nam is the second-largest coffee producer globally and the largest producer of Robusta beans. In 2018, Viet Nam produced 1.6 million tons of Robusta beans which are nearly 50,000 tons more than in 2017. Spurred by progress primarily in the coffee rejuvenation and replanting programs, the planted area of Vietnamese coffee reached record levels. Average yields of 3.4-3.6 tons of green bean per hectare are achievable in the Highlands, with several areas in Daklak capable of reaching 4.2 tons per hectare or more.

However, global coffee prices have been on a downtrend since 2017, caused primarily by an oversupply from Brazil and Viet Nam. Over the last three years, Robusta bean prices have fallen by a third and have reached a nine-year low⁵.

Figure 1.
Robusta Coffee Prices (USD/kg)



Source: YCharts - World Robusta Coffee Prices

Coffee exports from Viet Nam reached 1.9 million tons in 2018, valued at USD3.5 billion. This represented a 20% increase in quantity but only 1.2% increase in value compared to 2017. The current low-price environment has resulted in losses for the Vietnamese coffee sector of about VND2.5-3.0 trillion (USD110-130 million) in 2018⁶.

Production has been affected by depressed global prices. Coffee production in 2019 is expected to be 3.4% lower than in 2018 due to a combination of farmers reducing their annual production costs and unfavorable weather conditions in the Central Highlands⁷.

⁵ International Coffee Organization (ICO), 2019.

⁶ Vietnam Coffee and Cocoa Association (VICOFA), 2018.

⁷ VICOFA, 2019.

In some areas, it is reported that coffee farmers are paid lower than their production costs due to the recent increases in fuel and input costs.

In addition to the price environment, Viet Nam's coffee sector also faces other issues affecting its sustainability:

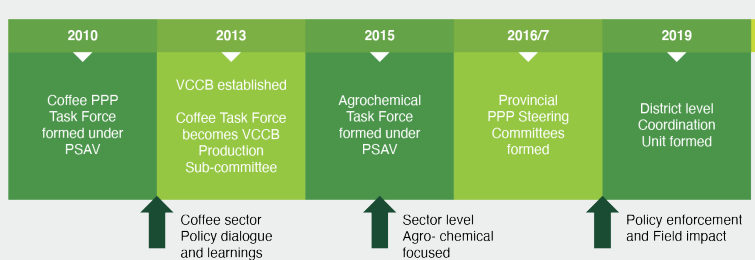
- Small-scale farms, with an average farm size of about 1.1 hectares per household⁸, have faced constraints in the uptake and application of technologies and standards as well as increasing production cost.
- The effects of climate change are increasing in recent years with water scarcity and extreme weather events being the most visible. In 2016, a drought in Central Highlands resulted in nearly 30% of production loss, coupled with the outbreak of diseases attacking the coffee sector. In 2019, heavy floods and a prolonged rainy season also affected the sector, leading to poor coffee quality.
- Aging trees are another challenge. An estimated 30% of the coffee area needs to be rejuvenated in the next 10 years to sustain the current production.
- Counterfeit and low-quality agri-inputs, especially fertilizers and pesticides, are also prevalent in many production areas. This is due to a combination of limited state management and enforcement at both national and local levels, as well as limited awareness of the issue by producers. In addition, there is also the overuse or incorrect use of fertilizers and pesticides—particularly the use of banned pesticides by Vietnamese regulations and the import market requirements. These in turn lead to higher production costs, degraded and increasingly acidic soils, and unsafe products.



⁸ Typically divided into several separate plots per household.

Development of the PPP Structure

Figure 2. Summary timeline and development of the PPP mechanism for the coffee sector in Viet Nam



The Formation of PPP Coffee Task Force (TF) and the PSAV Country Partnership

In 2010, WEF's New Vision for Agriculture (NVA) initiative and the MARD jointly supported the launch of Viet Nam's Public-Private Task Force on Sustainable Agriculture. In 2015, it was renamed the Partnership for Sustainable Agriculture in Viet Nam (PSAV) with five initial priority value chains – coffee, fisheries, fruits and vegetables, tea, and maize.

Initially, the Coffee TF was limited to a few foreign enterprises⁹ and no farmer organizations. As it was established as an informal group by the MARD Minister, it was not part of the government system and was only partially recognized as an important stakeholder by policymakers which resulted in its limited influence and subsequent challenges in achieving a coherent impact on sustainability or coffee production nationally.



VCCB Establishment, Membership and Structure

In 2013, with support from IDH, the MARD Minister issued a decree to set up the VCCB. The ambitions of the VCCB include: (i) influence and support of the policymaking and policy implementation of MARD, (ii) provide and share information, and (iii) link VCCB members with each other.

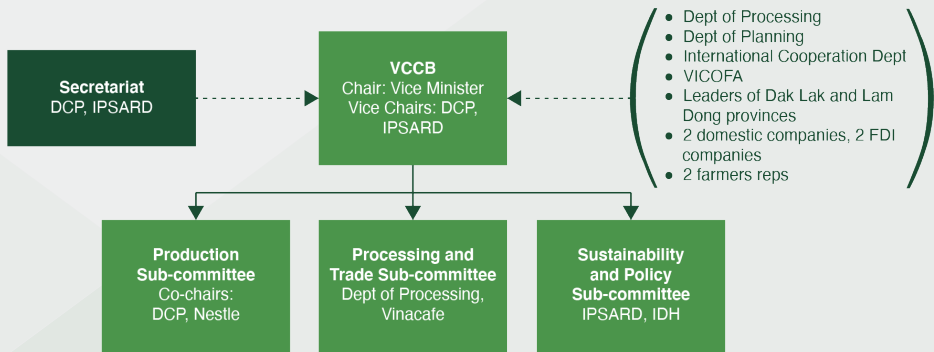
⁹ Key members include Nestlé, Yara, Syngenta, Bayer, IDH, SNV and government agencies such as MARD, IPSARD, and Provincial Agricultural Extension Centers. See *PSAV Coffee Journey* (<https://tinyurl.com/the-journey>).



The VCCB is chaired by the MARD Vice Minister and has 15 members – 50% from the public sector and the other half from the private sector and farmer organizations. The VCCB secretariat plays a coordination role and is staffed by part-time personnel from the Department of Crop Production (DCP) and the Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD). The VCCB has three sub-committees: (1) Processing and Trade, (2) Sustainability and Policy, and (3) Production. The Coffee TF was merged into the Production sub-committee, which includes about 40 public and private members that provide policy recommendations, pilot production initiatives, and learnings on the sustainable production of coffee to the wider sector.

Figure 3.

The Initial Governance Structure of the Viet Nam Coffee Coordination Board



VCCB's structure was innovative, but it had no precedent then in Viet Nam because it brought the private sector and farmers into the decision-making processes of the government. Though a voting system was implemented to give each partner an equal voice, its scope and impact were still limited by its lack of legal status. Without formal legal status, it could not appoint full-time staff nor receive public funding allocation. Its role was also limited to providing recommendations, but without the authority to implement nor enforce.



To overcome these constraints, an inter-ministerial group was organized to function as an advisory body for VCCB. This allowed the issues raised by the VCCB to be communicated to the relevant ministries through a VCCB/MARD representative in the inter-ministerial group. This approach strengthened VCCB's authority to influence policies relevant to the coffee sector, especially those managed by ministries other than MARD.

PPP Cross-sector Task Force

Over time, other technical barriers impeding the export of key commodities emerged, including market requirements on minimum residue limits. This led to the establishment of the PPP Agrochemical TF in 2015, with a focus on coffee, pepper, and tea. Co-chaired by the Plant Protection Department, IDH, and CropLife Asia, the Agrochemical TF works closely with the Tea TF, Pepper TF, and VCCB to consolidate the food safety and agrochemical overuse issues faced by these three sectors.

Examples of successes by the Agrochemical TF include the government's decision to remove carbendazim in 2017 and glyphosate in 2019, from Viet Nam's permissible agrochemicals. PSAV facilitated the establishment of the Agrochemical TF and its subsequent activities by encouraging partners to work together and co-fund some of the learning events.

Local PPP Structures

Having proven the effectiveness of VCCB at the national level, partners agreed to mirror the PPP mechanism at the sub-national level to drive impact on the field. PPP governance structures were initially established at the provincial-level in the two biggest coffee producing provinces: Dak Lak and Lam Dong. Their mandate was to steer the field-level projects implemented by public and private sector partners. This process was facilitated by IDH in conjunction with regular consultation with the VCCB and PSAV at the national level. Learnings from the field were transmitted through these local PPP structures to VCCB and PSAV at the national level.

Provincial-Level

At the provincial-level, Landscape Steering Committees are under the leadership of Vice-Chairmen of Provincial People's Committees. Similar to the VCCB, representation is equally shared between the public and private sectors. The Steering Committee's role includes: (i) defining a shared vision of the coffee sector development in each province. This is aligned with the national sector strategy, (ii) supporting the implementation of national policies, and (iii) aligning the public and private sectors' programs for sustainable coffee.

The provincial committees implemented key PPP coffee sustainable landscape initiatives (e.g. NSC) and shared those outcomes with farmers and other stakeholders throughout the province. VCCB is also a member of these steering committees. They meet twice a year to discuss alignment between the national, sectoral level and the provincial-level, and exchange learnings and initiatives.

District-Level

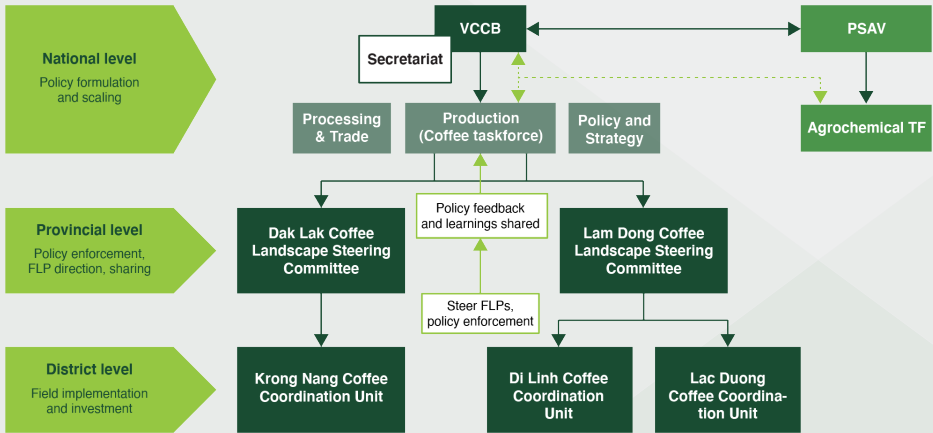
At the district level, three Coordination Units are set up under the leadership of the Chair or Vice-Chairman of three districts across the two provinces. Similar to the provincial-level body, they are organized to (i) support the alignment of implementation, (ii) create synergies among different investment resources, (iii) share experiences and knowledge from pilots or initiatives in reaching more farmers, and, most importantly, (iv) mobilize the relevant local authorities (at the commune or village level), companies working in the areas, and the local farmer organizations.

This coordination is essential for the implementation and scaling up of projects at the farm level, particularly the farmer training in NSC, and contributes to the creation of a sustainable coffee sector. These district coordination units report to, and exchange information with, the provincial sub-committees at least twice a year to facilitate planning, alignment of activities, and any proposed changes in implementation that are beyond the authority of district-level officials.

Figure 4 depicts the multi-level PPP governance structure in Viet Nam's coffee sector that was developed over 10 years.



Figure 4. The Evolution of the VCCB network of National, Provincial and District Committees



Viet Nam’s experience shows that to holistically support the transformation of a sector, PPP mechanisms need to be established at the national or sectoral level (e.g. VCCB) with cross-cutting issues addressed by specialist TFs (e.g. Agrochemical TF). Meanwhile, sub-national (provincial and district levels) coordinating bodies are critically important to deliver results in the field and to reach impact at scale. A single mechanism at the national level is insufficient to create real change across the sector.

PPP Activities and Approaches

Policy Development Pathways

The VCCB has implemented a two-way process for improving policy recommendations: First is the top-down process, where policy stems from national directives on issues such as climate change, international commitments including bilateral and multilateral trade agreements, etc. These include the development of laws (e.g. crop production, irrigation, forest protection), decrees, and decisions (e.g. access to credit, coffee rejuvenation, sustainable coffee production strategy). With these sectoral and macro policies, MARD and its subsidiaries are conducting research, drafting policies, and organizing stakeholder consultations.

Since the establishment of VCCB in 2013, it has become an important channel for consultations on coffee-related policies. VCCB organizes such dialogues and attracts strong participation and contribution from stakeholders. VCCB is also responsible for communicating with other ministries via the inter-ministerial group. Key ministerial interlocutors include the Ministry of Finance, Ministry of Investment and Planning, Ministry of Natural Resources and Environment, Ministry of Industry and Trade, and Farmer Union. However, VCCB can only do this well if its secretariat and/or active members are in regular dialogue and discussion with MARD. Even though it is stated in VCCB's establishment decision, the consultation process is not compulsory in the policy formulation process of the government.

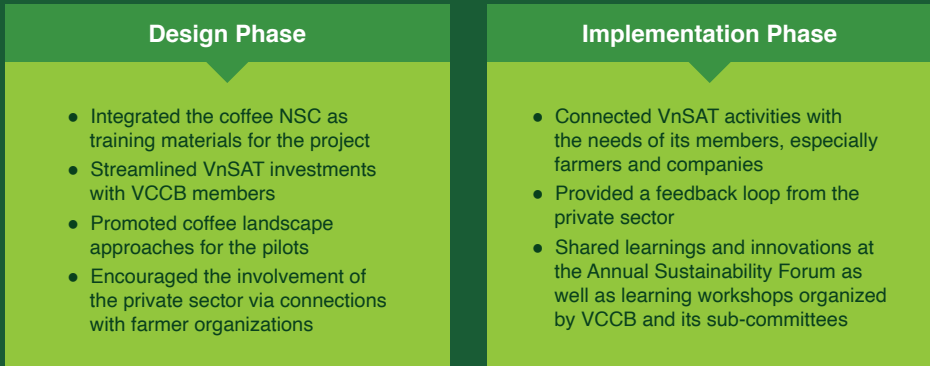
A second approach is bottom-up, where policy flows from the needs of the sector at the implementation level. These include the revision of existing policies or the development of new policies in response to the emerging needs of the sector. These policy revisions will emerge from the private sector from several different channels - the provincial steering committees, directly from the VCCB secretariat, the VCCB sub-committees, or the Agrochemical TF. The VCCB consolidates and analyzes these suggestions and provides recommendations to MARD. In many cases, these recommendations are also raised at the inter-ministerial group in dialogue with other ministries as well.

Alignment of National Programs and Organizations

The VCCB PPP structure also plays an important role in the alignment of programs and investments. With national programs like VnSAT¹⁰ or UN-REDD, alignment is coordinated by both VCCB and PSAV at the national level, as well as by the provincial or district PPP platforms.

¹⁰ The World Bank financed the Viet Nam Sustainable Agriculture Transformation (VnSAT) project which covered rice & coffee.

Figure 5.
VCCB's role in the VnSAT program



VCCB also partnered with several other organizations such as the Global Coffee Platform (GCP), IDH, UNDP, GIZ, and SNV at the national level. IDH and PPP coffee partners played an important role in supporting the establishment and operations of VCCB from 2012 to 2016. Meanwhile, GCP has served as the secretariat of the VCCB Production sub-committee since 2017 and it facilitates the implementation of the annual work plan with the private sector, supports the operations, and organizes key events of the VCCB.

VCCB aligns with the partnering organizations on their investments and activities to meet sector and export market demands while encouraging sustainable coffee sourcing, environment, and resource protection as well as social development.

Alignment of Sub-National Programs

Viet Nam also has several provincial/regional programs such as the Initiative for Sustainable Landscapes¹¹, Sustainable Coffee Programme, Coffee Innovation Fund, provincial rural development programs, sustainable landscape management through deforestation-free jurisdiction approach, and others. These programs are coordinated through the PPP provincial mechanisms. The organizations are invited to present updates or ideas for collaboration to the steering committees or at specific events organized by the programs.

At the district coordination units, partners sign joint agreements setting out shared vision and targets for sustainable coffee production, resource protection, and social inclusion for each district. They also agree on the division of the roles and responsibilities between public, private, and civil society partners in reaching the targets by 2025. Partners use these targets as milestones to track the progress of their investment programs.

¹¹ The programme report, based on the farmer diaries of 300 coffee growers are available [here \(https://tinyurl.com/farmer-field-book-analysis\)](https://tinyurl.com/farmer-field-book-analysis).

Knowledge & Learning

One of the key priorities of VCCB and the PPP structure in the coffee sector is to promote the sharing of public and private initiatives and learnings across the sector. VCCB organizes an annual Sustainability Coffee Forum, where public and private sector partners share their experiences, challenges, and lessons, especially in the field. The organization of these forums has been supported by GCP, PSAV, IDH, and other partners. The number of participants has increased yearly (20%) as the network grows and more relevant topics are included in the agenda.

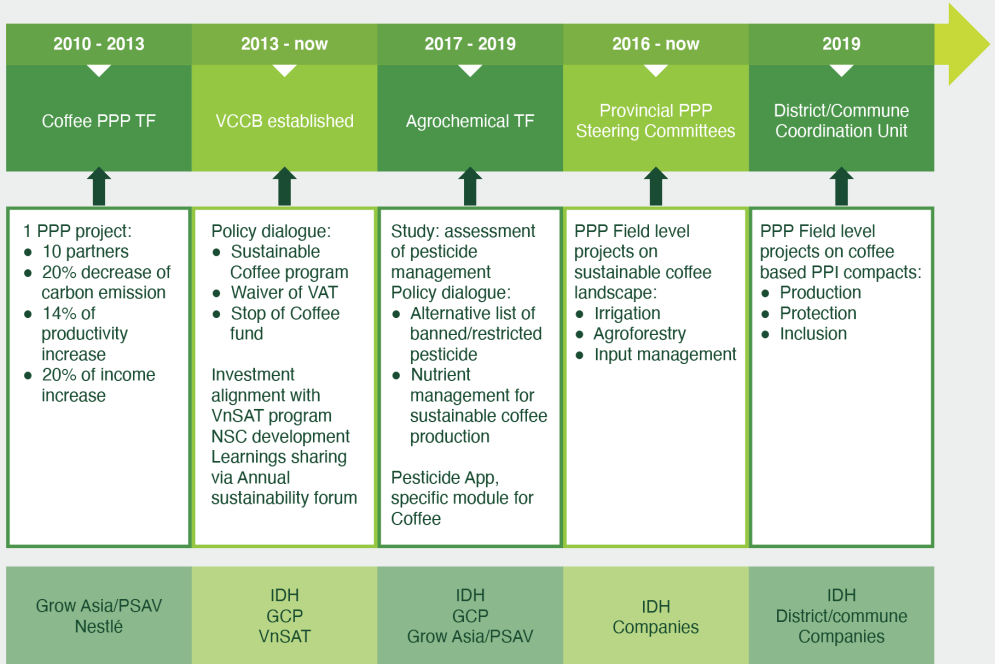


In addition to the annual forum, learning workshops have been organized for farmers within supply chains from different companies to learn from each other. Participants visit farms, share good practices and challenges, and discuss solutions. These sessions are helpful not only for the farmers but also enables companies and public extension officers to learn new initiatives and models.

Systems-Level Impact and Context

Figure 6.

Key achievements of PPP in the coffee sector



Policy Development

Influencing policy is a time-consuming process and typically difficult to attribute impact. There are two specific achievements in the policy arena that the VCCB played a critical role in.

The first success, which happened soon after VCCB's establishment, was the exemption of VAT on the purchase of green coffee beans¹². In the process leading up to this exception, VCCB

collected feedback and evidence from its members for coffee (of which 95% is exported) to be included in the list of VAT-exempt products. In 2013, the government issued Decree 209/2013ND-CP on the VAT application, which resulted in the exemption of 5% VAT for coffee exporters.

Still, there was a gap between the Decree and its implementation, and coffee exporters were delayed in recovering

¹² VCCB was not alone in arguing for VAT exemption for coffee beans, a number of individual companies also lobbied for changes in VAT.

VAT that was already paid. Several meetings were organized by the VCCB with different departments under the MoF and MARD. IDH, as the VCCB representative of foreign companies, also wrote a letter and provided evidence of losses incurred. These efforts sped up the VAT refund.

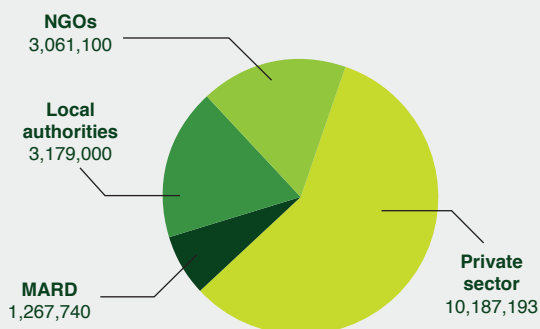
The change in VAT has had a positive effect on the coffee sector's cash flow. Previously, companies would pay 5% on the value of their green coffee bean purchases, which amounts to an estimated USD165 million based on farm gate payments of around USD3.3 billion. This money would be held in government accounts and are refunded based on their coffee export volumes—a process that would normally result in these funds being locked up for about a year¹³. However, this money is now available to the sector.

A second achievement of the VCCB was to prevent the Coffee Development Fund from being introduced. In 2015, the fund was a policy instrument suggested by VICOFA and submitted it to the MoF and Government Office, which consolidates all policy documents before they are submitted for approval by the Prime Minister.

Most of the coffee stakeholders that VCCB convened expressed concerns over the fund's governance, its financial transparency, and especially its likely negative impact on the sector's competitiveness. Additionally, VCCB consolidated the experiences of several coffee funds globally to share with VICOFA, MoF, MARD, and government officials, and MoF also invited representatives of different ministries, VICOFA, VCCB and IDH to share their thoughts. Ultimately, the government representatives were persuaded that the Coffee Development Fund should not be set up.

Figure 7.

Aggregate Investments from PPP Projects on Sustainable Coffee (USD)



Investment Leveraged

Between 2016-2020, more than 20 PPP projects in sustainable coffee production in Viet Nam attracted a total investment of USD17 million with the private sector contributing two-thirds (USD10 million). The investment by MARD and local authorities reflected in the chart below only includes their contribution to PPP projects.

¹³ While the law allows the VAT rebate to be claimed within 3 months, the process typically takes up to 1 year; there have been special cases where the claims took more than two years to process.



Sector-Wide National Sustainability Curriculum (NSC) and Trainings Delivered

The first-ever NSC was developed in 2016 to align existing training materials on sustainable Robusta coffee production. It created a framework on sustainable coffee farming practices that have been widely used by stakeholders from companies, farmers, and extension officers. More importantly, the Vice Minister of MARD, and Chair of VCCB, approved the use of the NSC as the official extension document for training coffee farmers in the World Bank-funded VnSAT project.

Over the last three years, more than 310,000 trainings using the NSC have been delivered under both public and private programs. Around 80% of the trainings were conducted by the private sector, with the remaining by the public sector. 35% of the participants are women. The investment in trainings amount to USD3.5 - 4.0 million¹⁴ annually.

Figure 8.
NSC Trainings 2017-2019

Year	Total reached farmers	Public Sector Trainings		Private Sector Trainings	
		Men	Women	Men	Women
2017	66,571	12,000	4,800	32,963	16,608
2018	136,236	15,600	8,400	72,954	39,282
2019	108,612	10,629	6,513	59,456	32,014
Total	311,219	38,229	19,713	165,373	87,904

¹⁴ Trainings cost between USD12-25 per person per training day.

NSC trainings include both train-the-trainers for farmer leaders and direct farmer trainings. Topics and training formats differ across companies, for example:

- Nestlé provides 3-4 train-the-trainer courses (half day for Farmer Field Schools and full 2-3 days for Training-of-trainer class) annually on all topics for the farmers involved in their sustainable coffee program.
- VnSAT project and Extension Centre provide comprehensive training of the entire NSC curriculum (all topics over three days) annually.
- Input companies such as Yara or Bayer conduct 1-2 trainings across the Central Highlands annually on specific topics, such as fertilizer or pesticide management.
- NGOs and consultant companies provide training depending on their projects and are usually based in a specific area.

Given that there are about 550,000 coffee households in the Central Highlands, it is estimated that the trainings have reached 100,000 households¹⁵ or 18% of all coffee households and the typical farmer will often have attended around three trainings.

In terms of adoption levels, higher rates of adoption (60-80%) were reported in comprehensive programs that provided supporting interventions such as demonstration farms, on-hand technical assistance, etc, in addition to the trainings. An estimated blended adoption rate of 50%¹⁶ was calculated amongst farmers who were trained and applied one or more of the GEP on their coffee farms.

The GEP not only lowered GHG emissions but importantly, lowered the cost of production for farmers. This was particularly important for farmers having to contend with falling coffee prices. Estimates of the fertilizer cost savings, in many cases through increased nutrient use efficiency and reduced irrigation costs, are about USD221 per hectare, translating into total savings of around USD12.3 million annually¹⁷ (see **Appendix: Calculations** for more details).

Companies and producers also commented that the NSC serves as a good training framework, but still needed to be adapted to local issues and the needs of farmers. This is an important learning, especially when developing the NSC for other sectors or when it is being revised. Another learning is that the NSC needs comprehensive actions and investment to drive the adoption of sustainable practices amongst farmers.

¹⁵ A conservative estimate based on 40,000 farmers in Nestlé's program, 12,000 farmers by IDH, and another 48,000 farmers from the VnSAT project and other companies.

¹⁶ Calculated based on adoption rates of 65% in Nestlé's program, 65% in IDH's program, and 35% for the other programs.

¹⁷ Based on 50,600 farmers with an average of 1.1 hectares per farming household.

Good Environmental Practices

in Robusta Coffee in Viet Nam



1. Recommends that farmers **apply fertilizers after irrigation and heavy rains** to avoid leaching of nutrition.
2. The type of fertilizer used depends on soil and leaf analysis and the symptoms of the coffee tree. Ideally, mineral fertilizer is applied in multiple applications. In practice, **four fertilizer applications per crop cycle**:
 - **Application 1**: Around flowering (pre-flowering/at flowering/post flowering), which is a short window of about a week. In the dry season, this is often combined with irrigation.
 - **Applications 2 and 3**: During the fruit expansion stage, one in the early rainy season and one in the mid-rainy season.
 - **Application 4**: Late fruit expansion stage to fruit maturing stage, which falls in the late monsoon season.
3. There has been a **gradual and small shift from urea to the slower release nitrate fertilizers**. Nitrate-based fertilizers are imported. The local fertilizer industry still invests and promote Urea and Urea-based NPK fertilizers. Unit Prices of Urea and Urea-based NPKs are lower. However, in view of the lower leaching losses, it is generally believed that Nitrate based fertilizers have costs lower per unit of Nitrogen utilized by the coffee plant.
4. Field trials have tested the optimum amounts and best timing for 'proper saving irrigation'. This has shown **each irrigation needs only 400 liters/tree** instead of the standard operating practice of between 600-650 liters/tree/irrigation. Coffee roots are only active in the top 50cm of soil. Excess irrigation results in the leaching of nutrients and the extra water drain below the active water uptake zone.
5. **Pruning is an important technique**. It improves the coffee tree's shape and strength and encourages the growth of productive branches. This resulted in yield improvement and reduced the occurrence of pests and diseases.

From Supply Chains to Landscape Approaches

The initial focus of field-level PPP interventions was to develop 50 demonstration farms in four coffee provinces co-funded by the public, private and NGO sectors. Meanwhile, other initiatives focused on training farmers to gain certifications such as 4C, UTZ, Rainforest Alliance, etc.

However, studies in 2015-2016 began showing that the impact of certification was limited and the adoption of sustainable practices by farmers was difficult to establish. Furthermore, issues of climate change, water scarcity, deforestation, soil degradation were not adequately addressed through these certifications alone. As a result, in late 2015, companies and PPP projects began scaling up demo-farms of sustainable practices. More than 400 demonstration farms were established in four provinces of the Central Highlands as learning sites for farmers. These demonstrations particularly focused on broader sustainability issues such as water-saving irrigation systems, agroforestry, and improved input use efficiency.

Meanwhile, inter-farm issues such as water management (especially for shared water resources), or disease outbreaks required neighboring farmers to take coordinated and collective action. This led to mini-landscape approaches with 50-70 hectare plots piloted with Simexco¹⁸ and Louis Dreyfus Company with support from IDH. Engagement from local authorities and other public programs in the region was important to the process. The field-level PPP structures proved to be

effective at directing the development and mobilization of farmers.

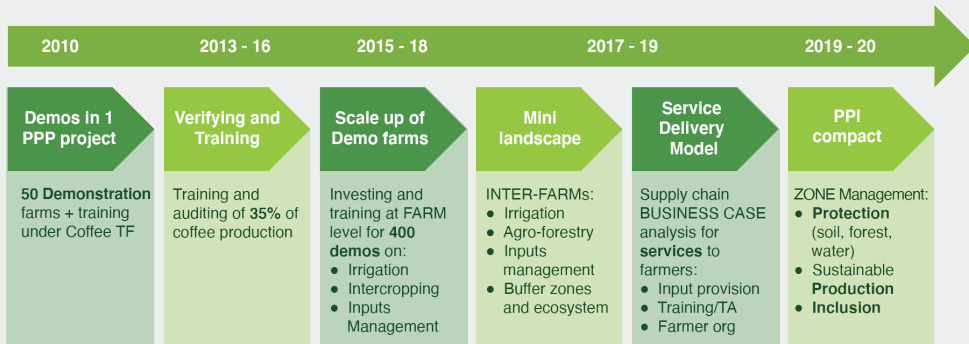
The success of the mini-landscape approach evolved into the Production, Protection, and Inclusion (PPI) compact, where service delivery models involving input companies, coffee traders, and farmers are developed to ensure the sustainability of models beyond the project cycle. The services include ensuring the supply of fertilizer and pesticides, seedlings, training/technical recommendations, access to credit, and information. In this process, the role of PPP partners involved governance, co-investment, and joint implementation. Three PPI compacts in Dak Lak and Lam Dong provinces are now being rolled out involving district/commune local authorities, coffee traders and roasters, as well as collectors and farmer organizations.



¹⁸ A state-owned company and Viet Nam's second-largest coffee exporter.

Figure 9.

Evolution of the Delivery of Sustainable Farming Practices in Viet Nam
















Source: IDH, 2019

Farm-Level Impact

The table below is an analysis taken from the daily records of 900 farmers in 2016 and 300 farmers in 2017-2018 in both Dak Lak and Lam Dong provinces. These samples are representative of the projects in which these farmers participate, but they are not representative of both provinces. The farmers in the sample typically have bigger farms (e.g. nearly 3 hectares), have participated in more learning events, and benefitted from the support activities in the field projects. Nevertheless, they provide a vision of the positive results that can be delivered.

Table 1.

Results of Farmer Field Records

	2016/17	2017/18	2018/19	Change	Description and units
	2.73	2.98	2.53		Benefit Cost Ratio
	10.9%	7.4%	8.8%		Return on Assets
	410	252	227		Irrigation water (m ³ /Mt coffee)
	1.28	1.10	1.16		Emissions (Mt CO ₂ e/Mt coffee)
	5.5	1.5	0.5		Environmental impact quotient #/Mt coffee
	15.3%	1.2%	0.5%		Use of banned pesticides (% of farmers)
	8.4%	3.5%	3.3%		Gender wage gap

Source: IDH and private partners project analysis, Agri-logic 2019 (<https://tinyurl.com/farmer-field-book-analysis>)

Benefit-Cost Ratio and Return on Assets

Apart from coffee price-related indicators (a global market issue beyond the influence of an individual program), all other indicators show positive progress over the last 3 years. While the reduced prices of coffee decreased farmers' margins, this was offset by the increased efficiency of input use promoted by the training. Production costs have been lowered by 16% from lower fertilizer investment and 17% from lower hired labor costs in Lam Dong, while Dak Lak farmers reduced biocides and energy cost.

Irrigation Water

Irrigation volume per tree reduced significantly. It is difficult to assess the effect of the trainings because 2016 was an exceptionally dry year, and farmers would have compensated by increasing their irrigation.

Carbon Emissions

Coffee can be a mitigating factor in climate change, removing more carbon from the air through biomass growth than it generates during production. Fertilizer and diversification are key factors in this. The role of improved nutrient use efficiency and fertilizer management is probably the most critical factor in optimizing the carbon footprint.

Impact of Pesticides on Environment

The independent consultants¹⁹ analyzing these farmer field records apply an environmental impact quotient per hectare. This has dropped significantly from 17.5 to 1.2, indicating a sharp reduction in the use of the most hazardous biocides. Toxic loading, as measured by the environmental impact quotient rating, has also reduced significantly to a level where we believe is no longer a concern.

The share of farmers who spray biocides has reduced significantly to less than 10% in Dak Lak. The average working hours used for this activity are minimal and dropped significantly as well.

Use of Banned Agrochemicals

There has been significant reduction in the use of hazardous and banned biocides has been very significant. Prior to their trainings, over 15% of farmers were using banned agrochemicals but after the training, this has dropped to 0.5% and no banned biocides were used. In total, the trainings on improved pesticide usage have so far impacted some 12,000 farmers through IDH and coffee partners projects.

Gender Wage Gap

The OECD defines the gender wage gap as the ratio between the median earnings of men and women relative to the median earnings of men. A gender wage gap larger than zero means that men earn more than women, a negative gender wage gap value means women earn more than men. This analysis shows the gender wage gap improving over the last three years in sample coffee households.

¹⁹ Agri-Logic, a Dutch based consulting company.

Estimate of Economic and Environmental Impact

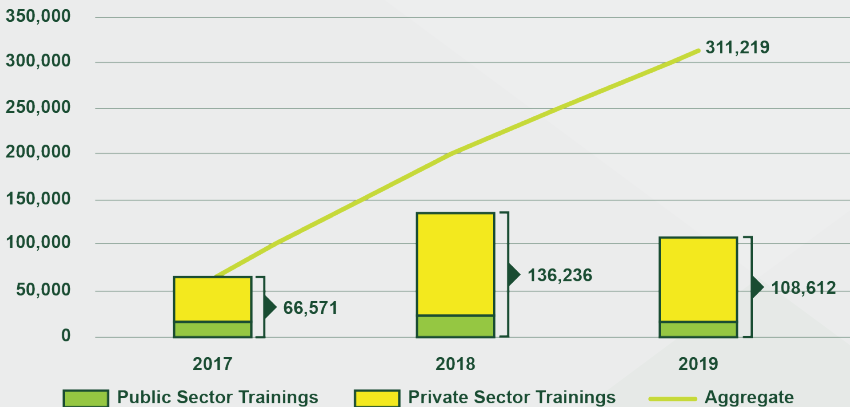
Several conservative assumptions have been made in generating estimated figures on the scale of impact. Under ideal circumstances, the projects would have started with a baseline, and ideally carried out random control trials. However, it is not practical in a project involving a staggered start, where trainings are carried out by multiple agencies/companies in different areas, and without overall coordination on results recording, not to mention the added complexity of falling global coffee prices on farmer investment. Nevertheless, some estimate of the quantification of what this means in the field is important as it provides the reader with an indication of the scale of impact.

Estimated number of farmers who have taken up the GEP/NSC on their farms

The graph below sets out the build-up in GEP/NSC training over three years to some 311,000 trainings. The trainings differed in content, length, and the institutions delivering the courses. Informed opinions suggest that, on average, each farmer has attended around three courses. These imply that some 100,000 farmers (about 18% of Viet Nam’s coffee households) will have received GEP/NSC training.

Figure 10.

Build up in the number of individual farmer trainings on GEP/NCS Practices



NB Farmers typically attend a number of different environmental trainings, around 3 each.

Surveys showed that nearly 85% of farmers in the Nestlé and IDH training had adopted one, or more, of the GEP, and roughly 65% in the other trainings. These adoption figures were conservatively reduced for the estimates in the Appendix: 65% was used for those that went through the IDH and Nestlé trainings as these were comprehensive, while 35% adopted in the other trainings. The blended adoption rate was thus lowered by a third (i.e. from 75,400 to 50,600 farms).

Estimated cost savings for farmers who have taken up the GEP/NSC on their farms

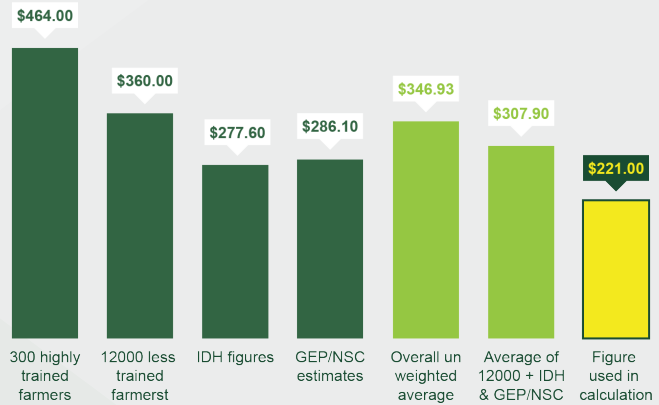
Data came from multiple sources. These included:

- 300 farmers who went through multiple GEP trainings and kept crop diaries on their inputs usage between 2016-2018 are considered models of good on-farm practices. The data from the diaries were analyzed by AgriLogic, an independent Dutch agricultural consulting company. Results showed that after the initial training, while coffee prices were still high (USD1,950-2,350/MT in 2017-2018), there was a distinct and clear decrease in farm variable costs of about USD464/hectare. This implies that these changes in farmer behavior were driven by their learnings at the courses.
- A broader network of 12,000 coffee growers from four IDH and partners' projects provided the cost of production data. These farmers did not receive the same level of GEP support as the aforementioned 300 farmers, but most participated in the GEP trainings nevertheless. The data from 12,000 farmers also showed that they reduced their production costs, but not to the same extent as the 300 farmers, nearly USD360/hectare.
- Other figures were from annual research of several coffee companies including IDH (USD278/hectare) and imputations from the NSC based on average costs (USD286/hectare). The investment in the coffee plantation is also affected by coffee prices and may differ between areas. To maintain consistency, the study used data/numbers provided by IDH research on their measurements of the percentage of cost reduction. These were compared with figures recommended by the NSC on lowering fertilizer application by 300kg/hectare is applied and when the typical cost of mineral fertilizer is USD550/MT. A saving of some 13.6% on fertilizer costs in the GEP/NSC scenario and 15.5% in the IDH figures (see Appendix for full calculation).

The graph on the right sets out the USD figures for reduced costs from the different data sources, their averages, and in the final column, the cost-saving figure used in the quantum calculations. The figures show that GEP training lowers coffee farmers' costs which can be explained by the common trend that farmers are typically quick to take up any techniques which save them money. The lower cost-saving figure used for this case study is a conservative figure, which also acknowledges that there is likely to be some degradation in the uptake as the GEP/NSC trainings are carried out at scale.

Figure 11.

Various estimates of farmer cost savings from the GEP/NSC (USD/hectare)



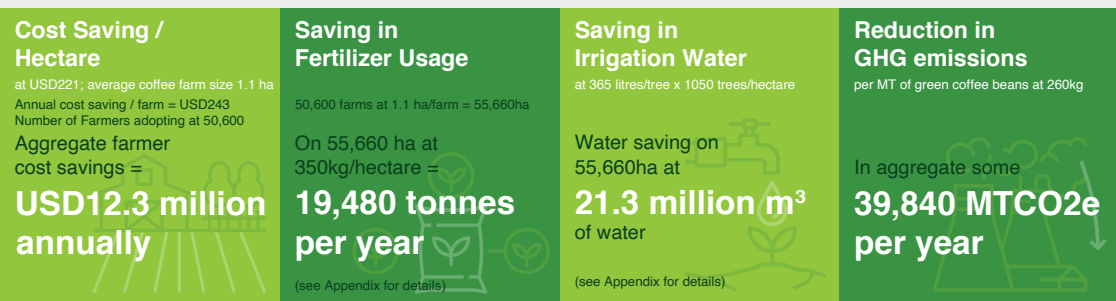
Other estimates

The GEP/NSC practices reduce water from 650 to 500 liters/tree, or 150 liters/tree. Three irrigations per annum amount to 450 liters/tree/year. In Viet Nam, there are normally between 1,000 and 1,100 coffee trees per hectare. The IDH figures indicate water costs were reduced by 22.5%, while the GEP/NSC recommendations reduce water usage by 33%. The figures used for the estimation of the water savings are an even lower blended reduction of 18.8%, or about 365 liters/tree/year (see Appendix for calculations).

No assumptions were made on changes in yield, although the original Yara/Nestlé GEP demonstrated a 14% increase in yields. The reduction in GHG emission was based on the figures calculated by AgriLogic at 260kg/MT of green coffee beans.

Figure 12.

Estimation of Cost, Water and Green House Gas Emission savings as a result of the farm adoption of GEP/NSC Improved Agronomic Practices



NB. These are indicative figures to provide the reader with a sense of the scale of impact

Lessons Learnt and Recommendations

The below summarizes key takeaways from the VCCB experience and PPP structures developed in the coffee sector. It also highlights bottlenecks that could be further improved for PPPs to further reach and scale impact.

- **Ground-level implementation** only happened at scale when **local level PPP Coordination units** were in place, mirroring the Public-Private-Producer representation of VCCB. This was achieved when a multi-layer PPP structure was set-up, including national, provincial, district and communes. This structure also enabled the VCCB to participate in learning, information sharing, and engaging in informed policy dialogue, while the local PPP units drive implementation through their commitment to and use of agreed targets. However, for now, this arrangement is only found in three districts. Expanding this to **at least two or three structures in each coffee production province** would help generate greater momentum and drive a greater scale. Once set-up, it is important to sustain an **efficient and low-cost operation**, tackling key issues of local and global market demand.²⁰
- **Top-down processes**, without being complemented by **bottom-up feedback loops, are in danger of not addressing the real issues** that farmers are facing on the ground. Therefore these **two approaches, a combination of bottom-up and top-down feedback loops, need to happen in parallel**. This ensures interaction between enabling environment issues and field impact, which in turn can bring real transformation towards more sustainability.
- **Training and demonstration plots** alone do not necessarily lead to the **adoption** of new and sustainable techniques unless they result in **cost savings and sustainable income diversification** at scale, which are more important to farmers. At the same time, the NSC is not widely applicable if there are no **adaptive local training curricula** developed to reflect and solve local issues and needs. Using the NSC, companies and localities should develop **their adaptive training curricula** and use it to train local extensionists, farmers, and input providers.
- **Individual projects will not achieve scale by themselves**. They are useful for piloting and proving effectiveness and credibility, but the scale is dependent on creating a wider network of **multi-stakeholder partners and joint investment** towards agreed targets (long term and short term). The scale and efficiency are much easier to achieve by focusing those investment and concerted actions in **verified sourcing areas where landscape and transparent supply chain approaches** are linked with and recognized by end-buyers²¹. Each province is recommended to pilot **at least one verified sourcing area for the whole selected district** by 2025, then scale up to the whole province by 2030.

²⁰ More lessons and recommendations can be shared by IDH and partners of how to achieve that.

²¹ This can be shared by IDH and public and private partners from 3 districts of Krong Nang (Dak Lak), Di Linh and Lac Duong (Lam Dong).

Number of Farmers Reached and Adopted, and Weighted Average Fertilizer and Water Reduction

VCCB Partners	Farmers Reached	Adoption Rate	Farmers Adopted	Fertilizer Reduction	Water Reduction
Nestlé	40,000	65%	26,000	15.50%	22.50%
IDH	12,000	65%	7,800	15.50%	22.50%
Others (VnSAT, etc.)	48,000	35%	16,800	7.75%	11.25%
Total / Weighted Average	100,000	51%	50,600	12.93%	18.76%

Fertilizer and Water Reduction Impact

	Fertilizer	(Irrigation)	Total
Typical cost (USD/hectare)	1,210	300	
Typical usage (per hectare unless stated)	2.2 tons mineral fertilizer	1,950 litres/tree/year	
Reduction	12.93%	18.76%	
Savings (USD/hectare)	\$156	\$56	\$221 ²²
Amount reduced (per hectare)	350kg	265 litres/tree * 1,050 trees/hectare = 383.25m ³	
x Adopted Farmers	50,600		
x Average Farm Size	1.1 hectares		
Annual Impact	19,460 tons less fertilizer	21,331,695m³ of water saved	\$12.3 million of savings

GHG Reduction Impact

VCCB Partners	Farmers Adopted	Reduction in MTCO ₂ e/ton of coffee ²³	Yield/hectare	Farm size	Annual MTCO ₂ e reduction
Nestlé	26,000	0.26	3.5	1.1	26,026
IDH	7,800	0.26	3.5	1.1	7,808
Others (VnSAT, etc.) ²⁴	16,800	0.13	2.5	1.1	6,006
Total					39,840

Reference Cost Savings from IDH and Imputation from NSC

	Typical cost (USD/hectare)	IDH Cost Reduction		Imputed NSC Reduction	
		%	USD/hectare	%	USD/hectare
Labor	1,650	-	-	-	-
Fertilizer	1,210	15.5%	187.6	13.6%	164.6
Pesticides	300	7.5%	22.5	7.5%	22.5
Water	300	22.5%	67.5	33.0%	99.0
Other	350				
Total	3,810		277.6		286.1

²² Includes USD8.30/hectare savings on agro-chemical use.

²³ Estimated based on the farmer diaries of 300 farmers, who reported 1.52 MTCO₂e per metric ton of coffee in 2016/2017 and 1.26 MTCO₂e per metric ton of coffee in 2017/2018.

²⁴ Halved the assumed estimated GHG reduction for these group of farmers and also reduced their yield



List of Abbreviations

DCP	Department of Crop Production
FLP	Field level project
GAP	Good Agricultural Practices
GCP	Global Coffee Platform
GEP	Good Environmental Practices
GHG	Greenhouse gas
IDH	The Sustainable Trade Initiative
IPSARD	Institute of Policy and Strategy for Agriculture and Rural Development
MARD	Ministry of Agriculture and Rural Development
MoF	Ministry of Finance
MTCO₂e	Metric tons of carbon dioxide equivalent
NPK	nitrogen, phosphorus, and potassium
NSC	National Sustainability Curriculum
NVA	New Vision for Agriculture
PPI	Production, Protection, and Inclusion
PPP	Public-Private Partnerships
PSAV	Partnership for Sustainable Agriculture in Viet Nam
TF	Task Force
UN-REDD	United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation
VAT	Value Added Tax
VCCB	Viet Nam Coffee Coordination Board
VICOFA	Viet Nam Coffee and Cocoa Association
VnSAT	Viet Nam Sustainable Agriculture Transformation
WEF	World Economic Forum

Grow Asia
info@growasia.org
www.growasia.org

PSAV
psav.office@psav-mard.org.vn
www.psav-mard.org.vn